

CLAIMS

1. A voltage level detector for protection control of a power amplifier comprising:

an output block including a power transistor and an output
5 terminal connected to a load;

a bias block including a standby pin and being allowed to bias other blocks of the power amplifier in activated states, especially the power transistor conductive, when the standby pin stays active;

a Area-of-Safe-Operation monitoring block for detecting the
10 operation of the power transistor outside their Area of Safe Operation and issuing a cutoff signal;

a first fault detection block for detecting fault conditions of the power transistor and the output terminal and issuing the cutoff signal; and

15 a protection switch block for cutting off the output block from the bias block and connecting the first fault detection block to the bias block during reception of the cutoff signal;

said voltage level detector comprising:

a second fault detection block for monitoring the voltage
20 level at the standby pin during power-up, and upon detection of the voltage level reaching a threshold level, detecting fault conditions of the power transistor and the output terminal; and

a cutoff signal generating block for issuing the cutoff signal when the second fault detection block detects a fault condition
25 of one of the power transistor and the output terminal.

2. A voltage level detector according to Claim 1 comprising:
a recovery block for monitoring the voltage level at the
standby pin during power-up, and upon detection of the voltage level
reaching a second threshold level, causing the cutoff signal
5 generating block to terminate issue of the cutoff signal.

3. A power amplifier comprising:

an output block including power transistor and an output
terminal connected to a load;

a bias block including a standby pin and being allowed to bias
10 other blocks of the power amplifier in activated states, especially
the power transistor conductive, when the standby pin stays active;

a Area-of-Safe-Operation monitoring block for detecting the
operation of the power transistor outside their Area of Safe
Operation and issuing a cutoff signal;

15 a first fault detection block for detecting fault conditions
of the power transistor and the output terminal and issuing the
cutoff signal; and

a protection switch block for cutting off the output block
from the bias block and connecting the first fault detection block
20 to the bias block during reception of the cutoff signal; and

a voltage level detector including:

a second fault detection block for monitoring the
voltage level at the standby pin during power-up, and upon
detection of the voltage level reaching a threshold level,
25 detecting fault conditions of the power transistor and the

output terminal; and

a cutoff signal generating block for issuing the cutoff signal when the second fault detection block detects a fault condition of one of the power transistor and the output terminal.

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4. A power amplifier according to Claim 3 wherein:

the voltage level detector includes a recovery block for monitoring the voltage level at the standby pin during power-up, and upon detection of the voltage level reaching a second threshold level, causing the cutoff signal generating block to terminate issue of the cutoff signal.

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